

VERIFICATIONS.

Indications.—The detailed comparison of the tri-daily weather indications for September with the telegraphic reports for the succeeding twenty-four hours, shows the general percentage of omissions to be 0.62 per cent, and of verifications to be 89.3 per cent. The percentages for the four elements have been, Weather, 92.6; Direction of the Wind, 90.6; Temperature, 88.0; Barometer, 85.6. The percentages of verifications by geographical districts, have been: New England, 87.7; Middle States, 90.3; South Atlantic States, 88.8; Eastern Gulf States, 89.2; Western Gulf States, 88.9; Lower Lake region, 88.3; Upper Lake region, 90.8; Tennessee and the Ohio valley, 89.9; Upper Mississippi valley, 89.8; Lower Missouri valley, 87.5; Northern Pacific coast region, 89.3; Central Pacific coast region, 100.0; Southern Pacific coast region, 100.0. Of the 3,667 predictions that have been made, 82, or 2.24 per cent, are considered to have entirely failed; 76, or 2.07 per cent, were one-fourth verified; 325, or 8.86 per cent, were one-half verified; 366, or 9.98 per cent, were three-fourths verified; 2,818, or 76.85 per cent, were fully verified, so far as can be judged from the tri-daily weather maps.

Cautionary Signals.—170 Cautionary Signals were displayed during the month, of which 117, or 68.8 per cent., were justified by winds of 25 miles per hour or over at, or within a radius of 100 miles of, the station. 29 Cautionary Off-shore Signals were displayed, of which 1 was not justified either as to direction or velocity; 28, or 96.5 per cent., were justified as to direction, of which 19, or 65.5 per cent., were justified also as to velocity. Of the Cautionary Off-Shore Signals, 16 were changed from Cautionary. 181 Signals of both kinds were displayed, of which 119, or 65.7 per cent., were fully justified. The above does not include signals ordered at 52 display stations where the velocity is only estimated. 35 cases were reported of winds of 25 miles or over where signals were not ordered.

NAVIGATION.

In the table on the right-hand side of Chart No. III. are given the highest and lowest readings on the Signal Service river-gauges for the month, with the dates. From this table it will be seen that the rivers have continued very low and generally falling throughout the entire month. The highest readings, with four exceptions, occurred during the first half, and the lowest readings, with only one exception, (New Orleans,) from the 26th to the 30th. The total monthly range at the Signal Service stations has averaged about two feet in the Red, Arkansas, Missouri, upper Mississippi, upper Ohio and Tennessee rivers. In the lower Ohio, at Cincinnati, thirteen, at Louisville seven and Cairo fifteen; in the Cumberland and at Nashville nine, and in the lower Mississippi at Memphis ten and at Vicksburg eleven feet. The low stage of water has caused a entire suspension of navigation in many of the navigable streams. On the 29th navigation was completely suspended on the Tennessee at Chattanooga, where the water was lower than since 1839. At Pittsburgh one-half the bed of the Monongahela was perfectly dry on the 30th, and the Alleghany was so low as to threaten the cities along its banks with a great scarcity of water.

High Tides.—Atlantic City, 22nd; Cape Lookout, 18th, very heavy NE. swell and full tide; 25th, p. m., very high; Indianola, 22nd and 24th very high, 30th flooding streets.

TEMPERATURE OF WATER.

The *temperatures of water*, as observed in rivers and harbors, with average depth at which the observations were taken, are given on chart No. II. At the following stations, on account of breakage of thermometer, no observations were made on the dates indicated:—Augusta, from the 11th to 23rd; at Portland, Me., 11th to 25th, and at San Francisco, 11th to 25th, all inclusive.

ATMOSPHERIC ELECTRICITY.

Thunderstorms occurred on the following days: In New England, 2nd, 3rd, 4th, 7th, 8th, 10th, 11th, 14th, 17th, 19th, 24th and 28th. Middle States, 2nd, 3rd, 5th, 7th, 8th, 13th, 14th, 16th, 17th, 24th and 28th. North Carolina, 8th, 19th. Florida, 2nd, 3rd, 5th, 7th, 9th, 11th, 16th, 17th, 18th, 21st, 22nd, 23rd, 24th and 29th. Alabama, 1st. Mississippi, 1st, 2nd, 12th and 15th. Arkansas, 12th. Texas, 8th, 9th, 10th, 11th, 19th, 20th, 24th and 30th. Ohio valley and Tennessee, 1st, 4th, 7th, 8th, 12th, 13th, 14th, 27th and 28th. Upper Lakes, 1st, 2nd, 3rd, 4th, 7th, 11th, 12th, 13th, 15th, 16th, 18th, 23rd, 26th, 27th, and 28th. Upper Mississippi valley, 1st, 5th, 6th, 7th, 9th to 15th, 18th, 21st, 22nd, 23rd, 26th to 30th. Lower Missouri valley, 5th to 13th, 20th, 21st, 23rd, 27th, 28th, 29th and 30th. Northwest, 27th and 28th. Colorado, 3rd and 18th. New Mexico, 4th, 17th, 18th, 27th, 29th. Idaho, 25th. Oregon, 8th. Lightning was observed at Calistoga and Princeton, Cal., on the 24th.

Auroras.—From the 9th to the 11th an extensive aurora was observed in all the states from New England to Dakota. Auroras were also observed on the dates named at scattered stations over the same tract of country as follows. On the first at Starkey, N. Y.; 12th, Eastport and Bangor, Me., Breckenridge; 15th, Vevay, Ind. and Monticello, Ia.; Eastport and Bangor, Me.; 17th, Starkey, N. Y.; 18th, New Corydon, Ind.; 19th, Wellsboro, Pa., Pembina; 20th, New Corydon, Ind., Eastport; 21st, Pembina, Burlington, Vt.; 22nd, Eastport; 23rd, Starkey, N. Y.; 24th, Springfield, Mass., Woodstock, Vt.; 25th, Fall River, Mass., Starkey, N. Y., Woodstock, Vt.

Atmospheric Electricity Interfering with Telegraphic Communication.—At Santa Fé, on the 4th, 5th, and 9th; Pilot Point, Texas, 5th; Mason, Texas, 11th; Jacksboro, Texas, 5th; Castroville, Texas, 8th and 9th; Eagle Pass, Texas, 20th; Socorro, N. M., 4th.